

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims

1. (Previously Presented) A synthetic polynucleotide comprising a sequence encoding a codon-optimized human papillomavirus serotype 16 (HPV16) protein wherein said polynucleotide sequence comprises codons that are optimized for expression in a human host.
2. (Original) A polynucleotide according to Claim 1 wherein the protein is selected from the group consisting of: L1, L2, E1, E2, E4, E5, E6 and E7.
3. (Original) A polynucleotide according to Claim 2 wherein the protein is selected from the group consisting of: L1, E1, E2, and E7.
4. (Original) A polynucleotide according to Claim 2 which is DNA.
5. (Canceled)
6. (Previously Presented) A polynucleotide according to Claim 4 wherein the protein is an HPV16 L1 protein.
7. (Original) A polynucleotide according to Claim 6 which comprises the polynucleotide of FIGURE 1 (SEQ.ID.NO: 1).
- 8-9. (Canceled)
10. (Previously Presented) A polynucleotide according to Claim 4 which is an HPV16 E1 protein.

11. (Previously Presented) A synthetic polynucleotide which comprises a sequence of nucleotides as set forth in FIGURE 2 (SEQ. ID.NO:2).

12-14 (Canceled)

15. (Previously Presented) A synthetic polynucleotide which comprises a sequence of nucleotides as set forth in FIGURE 3 (SEQ. ID.NO: 3).

16 (Canceled)

17. (Previously Presented) A polynucleotide according to Claim 4 wherein the protein is an HPV16E7 protein.

18. (Previously Presented) A synthetic polynucleotide which comprises a sequence of nucleotides as set forth in FIGURE 4 (SEQ. ID.NO:4).

19. (Previously Presented) An adenoviral vaccine vector comprising an adenoviral genome with a deletion in the E1 region, and an insert in the E1 region, wherein the insert comprises an expression cassette comprising:

A) a polynucleotide encoding a codon-optimized HPV16 protein selected from the group consisting of L1, E1, E2, and E7 proteins, wherein said polynucleotide is codon-optimized for expression in a human host cell; and

B) a promoter operably linked to the polynucleotide.

20. (Original) A vector according to Claim 19 wherein the adenoviral genome also contains a deleted E3 region.

21. (Previously Presented) A shuttle plasmid vector comprising a plasmid portion and an adenoviral portion, the adenoviral portion comprising: an adenoviral

genome with a deletion in the E1 region, and an insert in the E1 region, wherein the insert comprises an expression cassette comprising:

- A) a polynucleotide encoding a codon-optimized HPV16 protein selected from the group consisting of L1, E1, E2, and E7 proteins, wherein said polynucleotide is codon-optimized for expression in a human host cell; and
- B) a promoter operably linked to the polynucleotide.

22. (Previously Presented) A vaccine plasmid comprising a plasmid portion and an expression cassette portion, the expression cassette portion comprising:

- A) a polynucleotide encoding a codon-optimized HPV16 protein selected from the group consisting of L1, E1, E2, and E7 proteins, wherein said polynucleotide is codon-optimized for expression in a human host cell; and
- B) a promoter operably linked to the polynucleotide.

23. (Previously Presented) A plasmid according to Claim 22 wherein the plasmid portion is V1Jns.

24-29 (Canceled)

30. (Previously Presented) A method of making a codon-optimized HPV16 protein comprising expressing in a human host cell a synthetic polynucleotide encoding a human papillomavirus serotype 16 (HPV16) protein, wherein said polynucleotide sequence comprises codons optimized for expression in a human host.